ABSTRACT

A color scannerless range imaging system comprises an illumination system for illuminating a scene with modulated illumination of a predetermined modulation frequency, whereby some of the modulated illumination is reflected from objects in the scene; a sequentially selectable color filter arrangement positioned in an optical path of the reflected illumination and comprised of a first color filter that preferentially transmits the reflected modulated illumination and a plurality of other color filters that preferentially transmit reflected unmodulated illumination; a control system for driving the color filter arrangement to sequentially provide each of the color filters in the optical path; an image intensifier for modulating the reflected modulated illumination from the scene with the predetermined modulation frequency, thereby generating phase images needed for range information; and an image capture system for capturing a plurality of images output by the image intensifier, including a plurality of phase images corresponding to the reflected modulated illumination and a plurality of color images of reflected unmodulated illumination corresponding to color in the scene.